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New Species of Aleocharinae from Japan, II (Coleoptera ; Staphylinidae) *

Kohei SAWADA

ABSTRACT The present paper reports a few new taxa of the Aleocharinae from Japan, which include *Sipalia (Leptusa) yamato* n. sp., *Eubadura* n. subg., *Atheta (Eubadura) akiensis* n. sp., *A. (Atheta) crassa* n. sp., *Pseudoplandria sakuradanii* n. sp., *Plesiochara nitida* n. sp. A concept of the genus *Pseudoplandria* Fenyes is also discussed.

KEY WORDS Aleocharinae/chaetotaxy/Japan/taxonomy

***Sipalia (Leptusa) yamato* K. Sawada n. sp.** Fig. 1

Male. Brown in ground colour and weakly shining; head and abdomen for the most part intensively pigmented; antenna more or less infuscate; legs paler. Body is narrow and subparallel. Head rounded in outline, a little broader than long, evenly convex above and gradually depressed in front. The surface is densely covered with rather flat, somewhat coarse punctures (Fig. B). Eyes moderate, their diameter is apparently shorter than the length of the post-ocular region. Antenna fairly dilated towards the extremity; segment III a little shorter than II (Fig. C); IV distinctly broader than long. Labrum (Fig. A) strongly transverse; among 6+6 major setae *p2* is close to *d2* in position; proximal row of setae long in relation to distal row; medial row is the longest and nearly horizontally arranged; 1+1 secondary setae are present. Labral margin alike that of *S. deplanata* K. Sawada, 1970; *a* is long, fairly separating to each other and slightly outcurved. Mandibles short, stout and nearly edentate. Galea with a small distal lobe. Lacinia is corneous as usual; in the distal half there is a row of fine marginal spinules. From labial palpus (Fig. D) the chaetotaxy nearly as in *S. deplanata*, but β is more remote from *tp*; *f* is on the level of *e*; *g* is much more anterior to *h*. Glossa (Fig. E) as in the cited species, but more elongate. prementum with narrower, more strongly sclerotized median area. Pronotum about a third broader than long, gently rounded in front and abruptly narrowed behind and with a well-defined posterior corner; the integument is very finely, more densely punctured than in the head. The secondary setae on the midline are directed posteriorly. Elytra apparently longer than the pronotum and much more roughened than in the pronotum. The punctation is somewhat in transverse row in certain directions, and composed of flat, setigerous punctures as in Fig. F. Hind wings well-developed. Macrochaetotaxy as 01-20-21-21-21-32. Abdomen is nearly parallel and with rather asperate, fine punctures especially in the basal segments. Tergite VIII is not modified,

* Continued from Contr. biol. Lab. Kyoto Univ., 27 (3): 273-307 (1989).

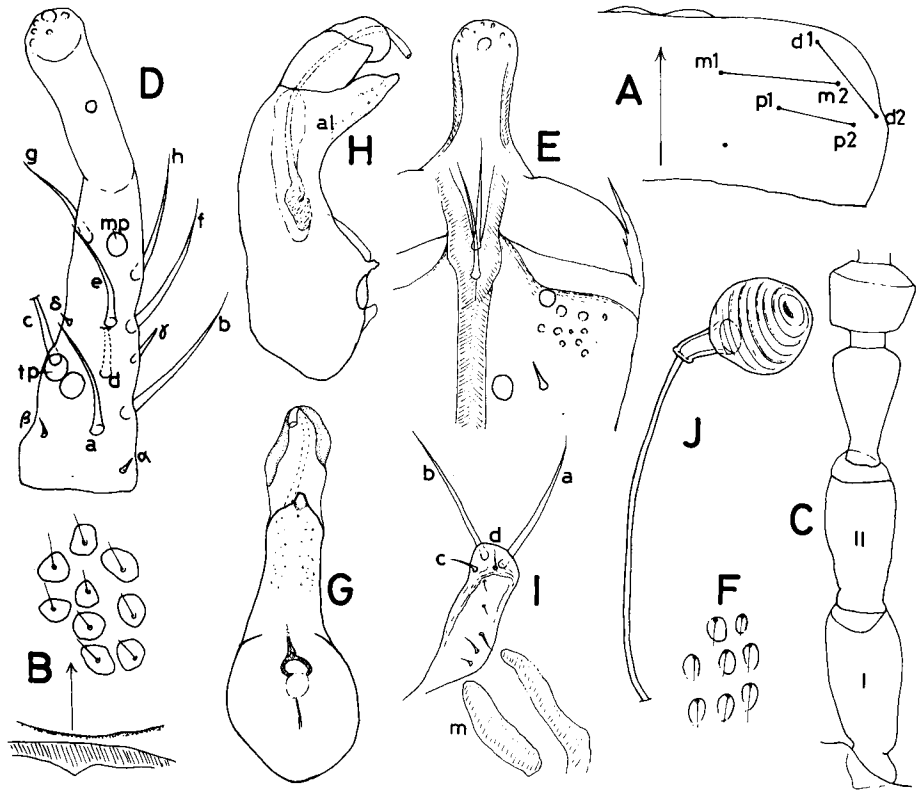

Fig. 1. *Sipalia* (*Leptusa*) *yamato*, n. sp. A. Labrum; B. Cervical carina & punctures of head; C. Antenna; D. Labial palpus; E. Glossa & prementum; F. Elytral punctures; G, H. Median lobe (ventral & lateral views); I. Distal segment of lateral lobe; J. Spermatheca.

but is only emarginate in the posterior margin ; there are 4+4 similarly short major setae. Prosternum carinate in the middle. Mesosternum acute at apex and with a short carinula at base. Lege short; each tibia has minute macrosetae.

Median lobe of aedeagus (Fig. G, H) is 0.34 mm long; laterally the apical lobe is strongly bent down in full length; ventrally the basal part is globose in outline and apical lobe is subparallel and abruptly pointed at apex. The inner armature (Fig. H) is in situ long, fuliform and curved at distal part where it is extended beyond the apex of aedeagus. Lateral lobe is broad, and its medial segment has the rectangular basal corner; velum is fully developed. In distal segment (Fig. I) four major setae are aggregated whithin the apical part, where there are very long setae *a*, *b* and two minute setulae to be designated as *c*, *d*. Peculiarly up to five accessory setulae are present in the distal segment; middle apodeme (*m*) is with a pigmented additional band.

Length. ca. 1.90 mm (head 0.28 mm long x 0.31 mm wide; pronotum 0.26 mm x 0.36 mm; elytra 0.34 mm x 0.45 mm).

Female. Abdominal segments are similar to those of the male sex. Spermatheca (Fig. J) is with a very long duct; bursa is bulbous in outline and with a short "stalk"; umbilicus not developed.

Specimens examined : Holo- (♂), allo- & I paratypes. Mt. Kongo (950 m alt.), Nara Pref. 22 II, 1990, K. Sawada leg. Within humus of *Fagus crenata-Sasa* association.

In gross feature of labium it is closely allied to the subalpine *S. deplanata* K. Sawada, 1970, but differs in different chaetal arrangement of labial palpus, i. e. setula *β* is proximally dislocated, *f* is distally removed, and in the much longer proximal row of setae of labrum.

Besides, the body is smaller, more narrowly elongate in the present species.

***Eubadura* n. subg.**

The head is voluminous, larger than the pronotum and with a distinct fovea in the middle. Body setae including abdomen are long, raised and more or less convoluted in arrangement. In the chaetal arrangement *Eubadura* is equal with *Notothecta* having 01-12- type of chaetotaxy. But in the details it is concordant with *Badura* in the secondary setae of labrum having 1+1. From four setae of the distal segment of lateral lobe the seta a is strongly developed. And this character is all same with *Notothecta* from which it is apparently derived.

Type species : *Atheta akiensis* n. sp.

***Atheta* (*Eubadura*) *akiensis* K. Sawada n. sp.** Fig. 2

Male. Reddish brown in ground colour and subopaque by the presence of distinct microsculpture. Body stout, and subdepressed above. Head is voluminous, seemingly broader than pronotum and with a well-defined fovea in the middle. The surface is closely, finely punctured throughout. Eyes rather small. Antenna is stout, segment I clearly longer than II; III subequal to II in length; IV slightly broader than long; V similar to IV; X fairly transverse. Labrum (Fig. A) short, broadly rounded in the anterior margin; among six major setae *ml* is on the row of distal setae, whereas *p2* is anterior to the level of *d2*, 1+1 secondary setae are present. Sensilla *a* of labral margin (Fig. B) is setaceous, short; *b* is conical; *c* is inconspicuous. Mandibles sharply hooked apically and almost edentate. Galea has distal lobe with very short cilia. Lacinia nearly straight in the inner margin, where there is a row of compactly arranged marginal teeth. From labial palpus (Fig. B) segment II rather long in relation to I, and all setae of segment I close to the level of *tp* whereas *e*, *f* close to the level of *mp*. Segment III is not dilated distally. Goossa (Fig. C) is short, deeply divided to two obtusely pointed arms. In prementum the median area is fairly broad and with

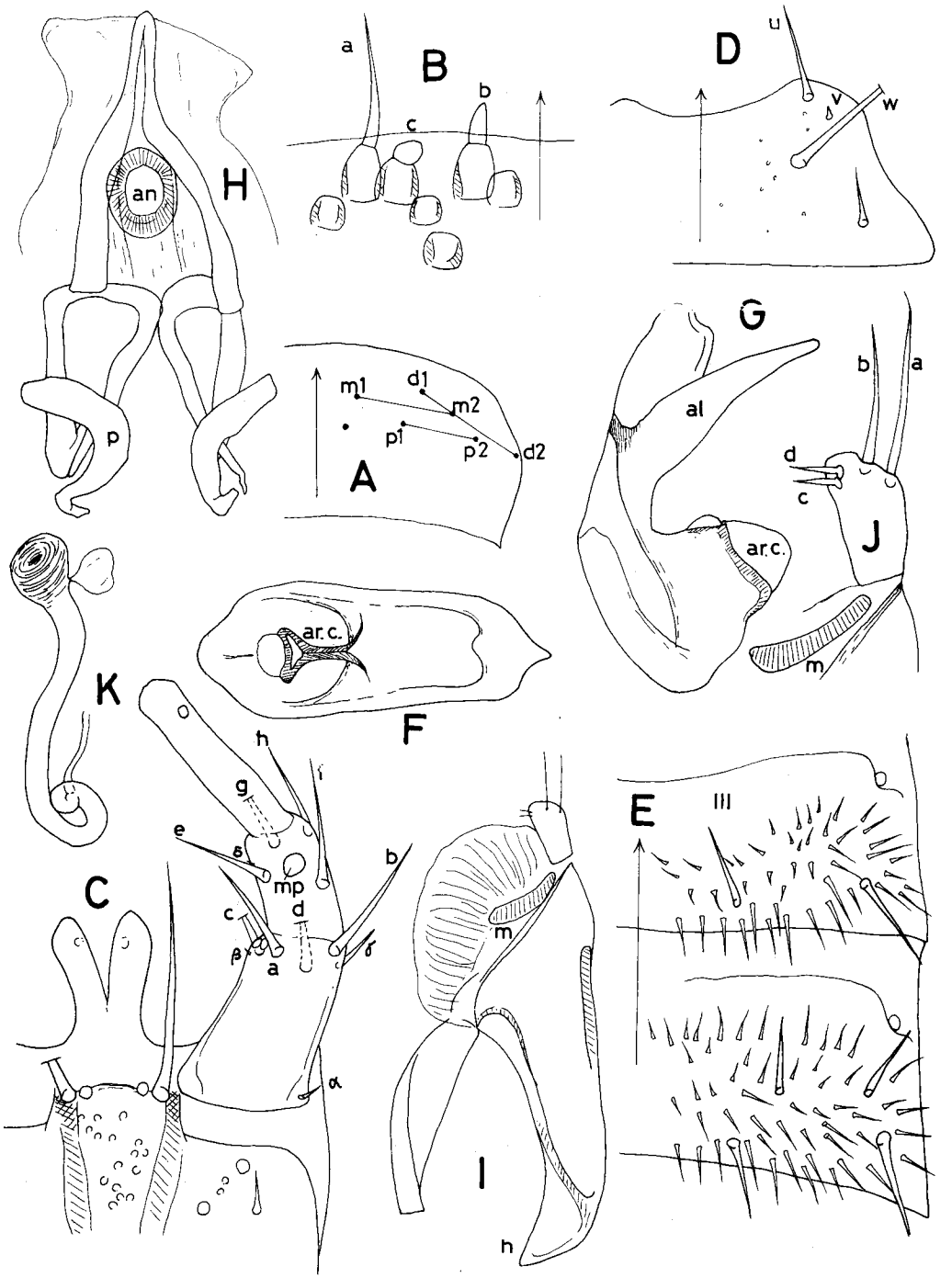

Fig. 2. *Atheta* (*Eubadura* n. subg.) *akiensis*, n. sp. A, B. Labrum & its margin; C. Labium; D. Mentum; E. Tergites III, IV; F, G. Median lobe (ventral & lateral views); Copulatory piece; I, J. Lateral lobe; K. Spermatheca.

many pseudopores; in lateral area there are 1 setal, 2 real and a few pseudopores. Mentum (Fig. D) is clearly emarginate in front; among three major setae *v* is minute and placed between *u* and *w*. Pronotum is fairly broader than long, weekly, sinuately narrowed behind, then the posterior corner is well-defined; above surface is obsoletely broadly depressed, the depression is gradually deeper towards the base; the lateral erect setae are short; the secondary setae along the midline are directed anteriorly. Elytra are a little longer than pronotum and finely rugulose throughout. The secondary setae on the posterior half of disc are arranged in rosette type. Macrochaetotaxy as 01-12 (or 02)-22-22-22-33. Abdomen is broad, slightly dilated posteriorly, and with the secondary setae which are more or less raised and arranged in rosette type (Fig. E). The basis of tergites III to VII are dpressed instead of V or VI. Tergite VIII is unmodified; among 4+4 major setae *a2* is close to the level of *aI;* the microsculpture in the specimens examined quite superficial. Prosternum raised in the middle; mesosternum acute at apex, the apex is remote from the metasternum. Tibiae finely densely spinulose and with very short macrosetae. Tarsal fomula as 4, 5, 5 in which meso- and metatarsi have segments I-IV subequally short and no empodia are present in all the legs.

Median lobe of aedeagus (Fig. F, G) is 0.28 mm long, abruptly convex basally and suddenly curved down in lateral view; the apical lobe is fairly long with a narrowly elongate apex; in ventral veiw the apical lobe is gradually narrowed, then abruptly pointed at apex. All costae are conspicuous; *ar. c.* are strong, entire and completely approximate in full length. Copulatory piece (Fig. H) is narrowly elongate and strongly dilated basally; annellus is large, situated in the middle of the corpus. Suspensorium is well-developed, much prolonged to form a large coil and accompanied with a curved additional element (*p*). Lateral lobe (Fig. I) has well-developed velum; middle apodeme as usual; in medial segment the basal corner (*h*) is produced with rather sharp corner. From distal segment (Fig. J) *a* is longer than the segment; *b* is a little shorter than *a*; *c, d* are small.

Length. up to 2.40 mm (head 0.30 mm long x 0.43 mm wide; pronotum 0.36 mm x 0.46 mm; elytra 0.40 mm x 0.55 mm).

Female. Tergite VIII and sternite VIII are alike those of the male sex. Head is foveolate as in the male. Spermatheca (Fig. K) is prolonged to form a small coil at end; bursa is small for the corpus, bulbous in outline and with a fine umbilicus.

Specimens examined; Hollo- (♂) & allotypes, Hatsugami, Kami-Kamagari-shima, Hiroshima Pref., 26 II, 1989, I. Okamoto leg., found within forest litter near seashore.

In the rounded anterior margin of labrum and in having no emargination for sensilla *b* of labrum the present species is characteristic.

Besides, the aedeagus has coiled, long suspensoria.

***Atheta* (*Atheta*) *crassa* K. Sawada n. sp.** Fig. 3

Male. Ground colour is dark reddish brown and subopaque by the presence of

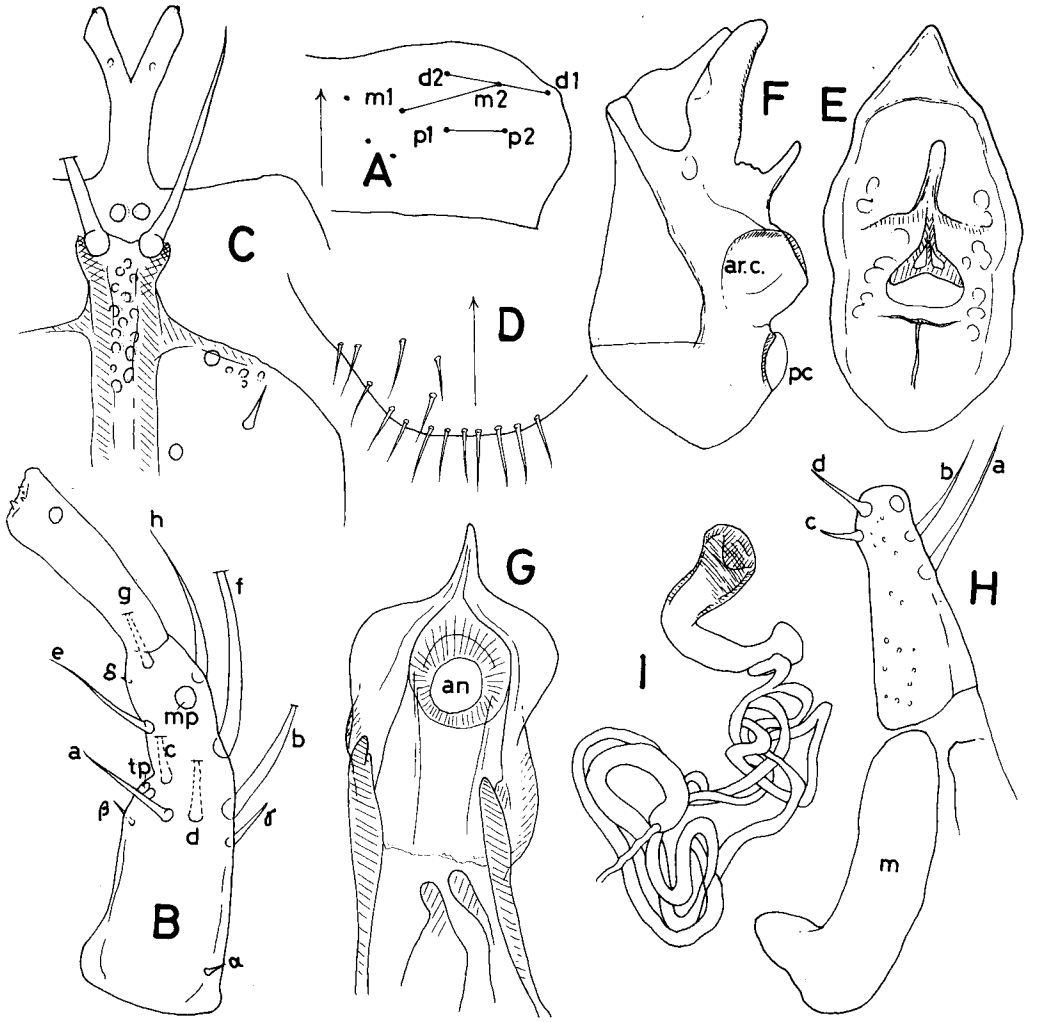

Fig. 3. *Atheta* (s. str.) *crassa*, n. sp. A. Labrum; B. Labial palpus; C. Glossa & prementum; D. Sternite VIII; E, F. Median lobe (ventral & lateral views); G. Copulatory piece; H. Distal segment of lateral lobe; I. Spermatheca.

distinct coriaceous microsculpture. Bosy is robust and rather flat above. Head rounded, flat above and weakly depressed in the middle; finely obsoletely puncutured throughout. Eyes moderate, their diameters about as long as the length of post-gena from above. Antenna is robust; segments I to III subequally elongate, whereas IV as long as wide; VI to X clearly increasing in width; X distinctly transverse; XI moderately elongate. Labrum (Fig. A) is distinctly transverse; *m2* is anterior to the level of *d2*; 3+3 secondary setae are present. From labral margin *a* is long setaceous; *b* is broadly truncate at apex; c is inconspicuous. Mandibles sharply hooked as usual and nearly

edentate. Segment III of maxillary palpus is gently dilated in the middle; IV rather long. Galea has an elongate distal lobe and with similar cilia all over. Lacinia is not abruptly dilated in the inner margin, where there is a row of marginal spines arranged as usual. The chaetal arrangement of labial palpus (Fig. B) is similar to that of *A. transfuga* (Sharp) (cf. Yosii et Sawada, 1970, p. 70); *a* is on the same level with *b* ; segment III is equal to I in length. Glossa (Fig. C) is fairly elongate and forked from the middle into two slender arms whose apices are rather pointed. In prementum (Fig. C) median area is parallel and with numerous small pseudopores; in lateral area there are one setal, two real a few pseudopores widely distributed. Mentum is shallowly emarginate in front; *v* is short, close to *u* in position; *w* is well-developed compared to *u*. Pronotum is strongly transverse, broadly rounded in antreior half and feebly arcuate behind, and very broadly shallowly depressed above, the depression is becoming foveolate just before the base ; the surface is more distinctly coriaceous than in the head; lateral erect setae are conspicuous ; secondary setae along the midline are directed anteriorly. Elytra are fairly broad, much longer than the pronotum, slightly emarginate postero-externally and more roughly sculptured than in the pronotum. Machrochaetotaxy as 02-13-13-13-13-34. Abdomen is broad, only gradually narrowed behind and subglabrous in the posterior tergites. Tergite VIII is broadly truncate posteriorly, the truncated margin is loosely crenulate and is gently emarginate in the middle; among 4+4 major setae the anterior row of setae is horizontal in arrangement and fairly remote from stigma; transversely imbricate pattern is present. Sternite VIII (Fig. D) is produced behind and with a row of similarly long, conspicuous marginal setae. Ventral is not remarkable. Each tibia has moderately long macrosetae. Metatarsus with segments I to IV subequally short.

Median lobe of aedeagus (Fig. E, F) is 0.48 mm long and triangularly pointed in ventral view; there is a conspicuous median ridge (p) whose apical part is to form a slender process. This character is well concordant with *A. iturupensis* Bh. (cf. K. Sawada, 1977, p. 188). In addition, there are many fenestrate markings are present around the median foramen. Inner armature (Fig. G) is essentially as in *A. iturupensis*, but copulatory piece is broader, its process is shorter and annellus is much larger. The distal segment of lateral lobe (Fig. H) is dilated basally; *a* is as much as two-thirds of the segment. whereas *b* is shorter. Peculiarly middle apodeme (m) is well-developed and curved at distal end.

Length ca. 4.0 mm (head 0.41 mm long x 0.52 mm wide; pronotum 0.46 mm x 0.69 mm; elytra 0.66 mm x 0.89 mm).

Female. Tergite VIII is not modified, only broadly emarginate in the posterior margin. Sternite VIII is short, rounded and shallowly emarginate at the apical margin, where there is a row of up to 20 short and long marginal setae, but no such long marginal setae as in the male sex. Spermatheca (Fig. I) is complicated; umbilicus is robust; duct is more or less enlarged at the distal end.

Specimens examined: Holo- (♂) & allotypes, Mt. Ontake (alt. 1500 m), 6 X, 1972, R. Yosii et K. Sawada leg.

As the spermatheca being complicated and as the presence of V-shaped suspensoria it must be included in *Atheta* (s. str.).

In many crucial characters it is closely similar to *A. iturupensis* Bernhauer, 1907, but differs in the copulatory piece not so much deflected basally, with larger annellus, and in slenderer glossa, with the parallel median area of prementum.

Besides, the elytra is much longer in the present speceis.

***Pseudoplandria* Fenyes, 1921**

Chaetal arrangement is 01-02-, but the cervical carina is not diverged. In *Pseudoplandria* the articulation of 4th segment of labial palpus is going to diminish, but whether it is poorly subsegmented or completely segmented is fixed after species and not genetically determined. From *Aleochara* it is easily distinguished by short, broadend glossa and glabrous integument of the body.

***Pseudoplandria sakuradanii* K. Sawada n. sp.** Fig. 4

Male. Bright reddish brown in ground colour and strongly shining; elytra are often infuscate for the most part. Body narrow and convex in the fore-parts. Head narrower than pronotum, nearly orbicular in outline, obsoletely punctured and without microsculpture. Cervical carina is not diverged. Eyes moderate and only projected from the head contour. Antenna rather short; segments I, II subequally elongate, but III shorter; IV about as long as wide; V to X distinctly increasing in width; XI large. Labrum (Fig. A) is broadly emarginate in front; in chaetotaxy proximal row of setae short, parallel to distal row; *p2* is posterior to the level of *d2*; 1+1 secondary setae are present. In labral margin *a* is short, setaceous; *b* is triangularly at apex; *c* small, conical. Mandibles as usual, briefly hooked at apices; the right one has a fine molar. Maxillary palpus (Fig. B) is 5-segmented; segment II dilated distally; III slender, one and a half longer than II; IV short and with minute segment V. Galea has a well-developed, elongate distal lobe having similarly short cilia all over. Lacinia is corneous and fairly pigmented; its inner margin has the distal comb consisting of six short spines. There is a deep notch posterior to the distal comb; short and long isolated teeth are present posterior to the notch of the inner margin. Labial palpus (Fig. C) is 3-segmented; the last segment has a paired sensillae before the apex and with a constriction, giving it a subsegmented appearance, but it would not be a segment from which it divide. In chaetal arrangement *a* is characteristically absent; β is separate from *tp*; γ is on the midway between *b* and *f*; δ is on the level of *mp*; *h* is far remote from *mp*. Glossa (Fig. C) is narrow, elongate, fully reaching the apex of segment II of labial palpus and with a pair of conspicuous setae

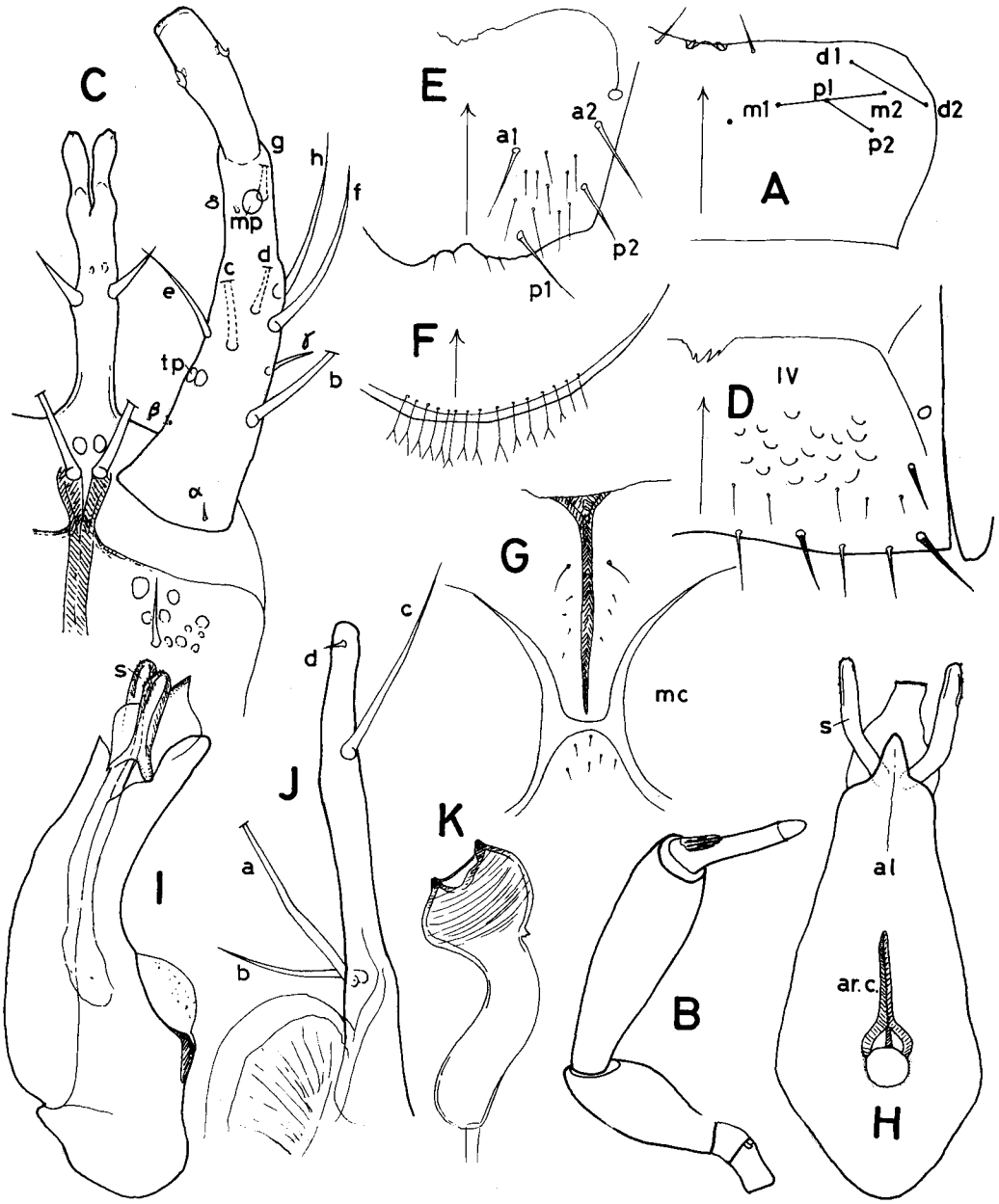

Fig. 4. *Pseudoplandria sakuradanii*, n. sp. A. Labrum; B. Maxillary Palpus; C. Glossa & prementum; D. Tergite IV; E, Tergite VIII; F. Sternite VIII; G. Mesosternum & mesocoxae; H, I. Median lobe (ventral & lateral views); J. Distal segment of lateral lobe; K. Spermatheca.

at about the middle; fairly divided at apex to two elongate, teat-shaped arms. In prementum (Fig. C) median area is narrow, parallel and devoid of pseudopores, consequently the distal setae of prementum are standing close together; in lateral area all

the pores including setal one are confined to the centre of the disc. Mentum is slightly emarginate in front; *v* is minute, near by *u*, and both setae are located at apical-most. Pronotum is evenly, strongly convex above, very broadly rounded anteriorly; the posterior corner is quite rounded; the surface is obsoletely, finely punctured throughout; the secondary setae along the midline are directed posteriorly; the lateral erect setae short. Elytra are about as long as pronotum and gently emarginate postero-externally; moderately densely, rather asperately punctured, especially in the postero-internal area distinctly so. Peculiarly flabellum with only one short seta. Macrochaetotaxy as 01-02 (or 01)-02-12-13-23. Abdomen is fairly narrowed behind and sparsely, rather asperately punctured; the secondary setae of tergites III, IV are strongly diminishing and curled as in Fig. D. Tergite VI has a tubercle near the apex; VII with a short carina which does not reach the posterior margin. Tergite VIII (Fig. E) has an emargination behind, whose margin possesses a few setigerous spinules; among 4+4 major setae *a2* close to stigma; *al* is remote from *a2*. The posterior margin of sternite VIII (Fig. F) is with a row of quite fine, apically bifid marginal setae. Mesosternum (Fig. G) is carinate completely and rounded at apex, which meets the metasternal process. Consequently mesocoxae are separating to each other. All tibiae have short macrosetae. Tarsal formula as 5, 5, 5, in which meso- and metatarsi have segments I to IV subequally short. Empodium of each lege is conspicuousey long.

Median lobe of aedeagus (Fig. H, I) is 0.43 mm long; ventrally apical lobe is distinctly narrowed anteriorly to form a short, abruptly projecting apex. There is a pair of elongate, more or less geniculate processes (*s*) which are derived from the distal apophyses of aedeagus; laterally apical lobe is gently bent down in full length and with *s* finely roughened at apices. Copulatory piece is narrow, filiform, but not surpassing the apex of aedeagus. Lateral lobe is narrow as a whole and with nearly rectangular basal corner of medial segment; distal segment (Fig. J) is narrow, very long, as much as a half of the corpus; *a*, *b* are close together and placed proximally; *c* is longer than *b* and placed anterior one-third of the segment; *d* is strongly reduced and apical-most in position.

Length. up to 3.0 mm (head 0.31 mm long x 0.41 mm wide; pronotum 0.32 mm x 0.56 mm; elytra 0.45 mm x 0.70 mm).

Female. Tergites III, IV have similar curled setae to the male. Tergite VIII more shallowly emarginate behind. Sternite VIII is similar to the male sex with apically divided marginal setae. Spermatheca (Fig. K) is short, twisted; bursa is bulbous with a large depression at apex.

Specimens examined; Holo- (♂), allo- & 5 paratypes, Kiyotaki (650 m alt.), Nikko, Tochigi Pref., 16 VIII, 1982, K. Sawada leg.

The furcate marginal setae of sternite VIII, and minute seta *d* of the lateral lobe of aedeagus are peculiar to the present species.

The species dedicated to Professor Y. Sakuradani of the Kinki University.

***Plesiochara nitida* K. Sawada n. sp.** Fig. 5

Male. Ground colour is dark brown and shining; antennae, elytra and legs uniformly brown. Body large, elongate. Head orbicular in outline, evenly convex above, moderately coarsely, densely punctured, the punctation is becoming obliterate to the frons, and with rather distinct microsculpture throughout. Eyes small, gently convex beyod the head contour. Cervical carina well-diverged. Antenna fairly long and only dilated distally; segment I thicker than II, but shorter; III the longest; IV to VI a little longer than wide; VII to X gradually increase in width; XI short. Labrum (Fig. A) is nearly straight in the anterior margin; As to the chaetal arrangement it is similar to *P. fusca* K. Sawada, 1989, but the proximal row of setae is the longest; there are 6+6 secondary setae. *a* of labral margin (Fig. B) thick at base, short; *b* located close together, nut-shaped; *c* inconspicuous. Mandibles stout, hooked at apices; the right one has an invisible dens near base. Galea has a small distal lobe having similarly long, dense cilia throughout. Lacinia is gradually dilated in the inner margin, where there is a row of short, stout, regular spines. Labial palpus (Fig. E) is 4-segmented; from chaetotaxy *b* is distally removed when compared to *a*; *e* is on the same level with *f*; *h* close to *g* in position. Glossa (Fig. E) about as long as wide and divided from base; each arm with three similar spinules at apex; the paired basal pores standing close together. In prementum median area is nearly paralle and with a few small pseudopores apically; in lateral area there are one setal, two real and several small pseudopores. Mentum is fairly emarginate in front; *u* is apicalmost, but *v* is behind *w*. Pronotum is feebly broader than long, clearly narrowed behind, the lateral margin is faintly sinuate before the base, thus the posterior corner is well-defined; gently convex above broadly, obsoletely depressed towards the base. The surface is distinctly asperately, densely punctured all over the disc; there are long and short marginal setae. The secondary setae along the midline are directed anteriorly in the anterior half and posteriorly so in the posterior half. Elytra apparently longer than the pronotum, faintly emarginate postero-externally and much more roughened than in the pronotum. Flabellum with numerous long setae. Macrochaetotaxy as 01-33-33-33-33-33. Abdomen nearly parallel and with conspicuous lateral erect setae, even in the basal segments. Tergites III to VI deeply excavate at their basis, where there are some coarse punctures scattered. Tergite VIII is lightly emarginate in the middle of the posterior margin; there are 6+6 major setae arranged as in Fig. F. Sternite VIII with numerous long black setae. Mesosternum rather rugose, with a fine carinula at base. Legs fairly long and setose; tarsal formula as 5, 5, 5, in which metatarsus has segment I unusually elongate, fairly longer than three preceding together; V a little shorter than I. Each leg with conspicous empodium. All tibiae have subequally short macrosetae.

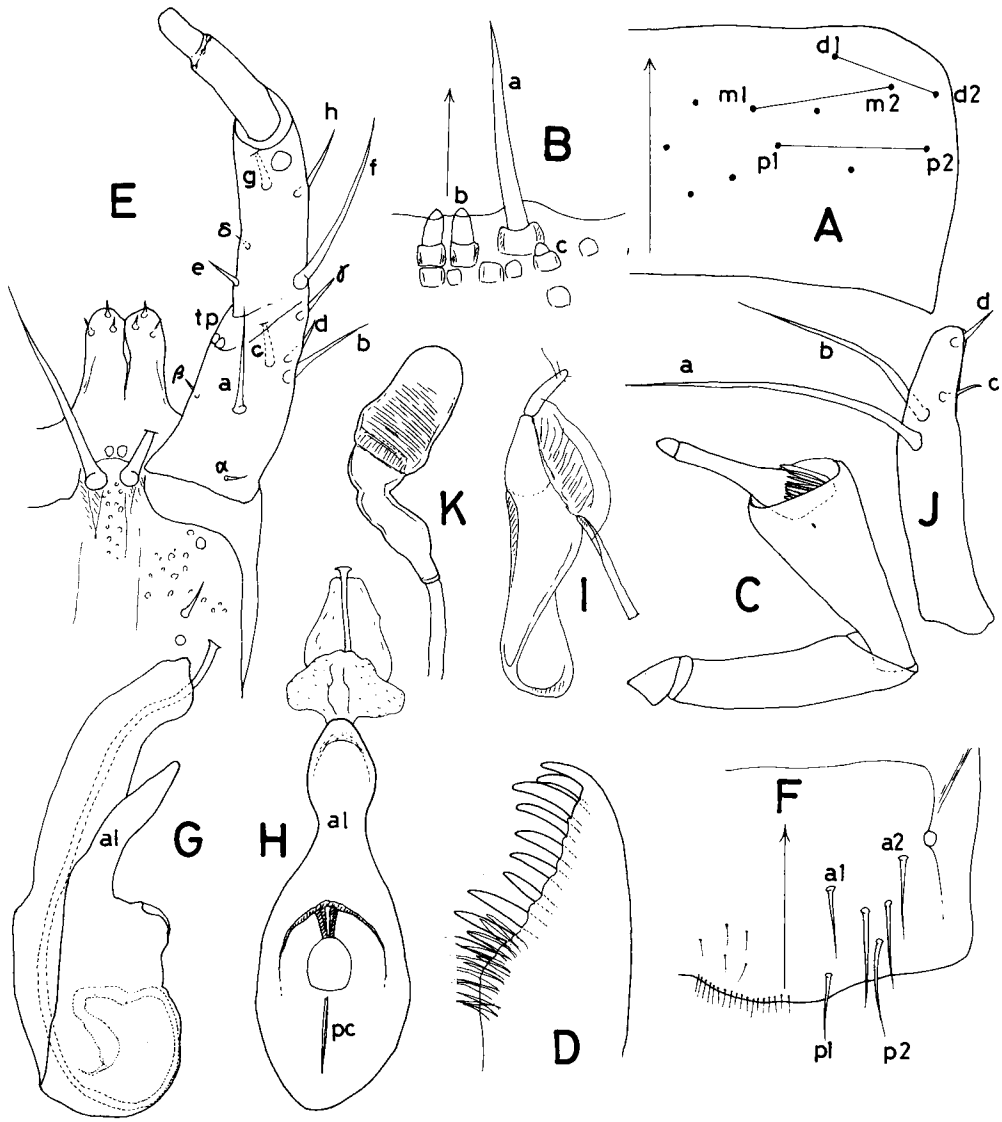

Fig. 5. *Plesiochara nitida*, n. sp. A, B. Labrum & its margin; C. Maxillary palpus; D. Lacinia; E. Labium; F. Tergite Ⅷ; G, H. Median lobe (lateral & ventral views); I, J. Lateral lobe & its distal segment; K. Spermatheca.

Median lobe of aedeagus (Fig. G,H) is 0.76 mm long; ventrally apical lobe is fusiform with a strong constriction; laterally copulatory piece is in situ narrowly filiform and broadly curled basally. Lateral lobe (Fig. I) is narrow and elongate; velum is moderate. Distal segment (Fig. J) is narrowly elongate; among four major setae *a*, *b* are long and close together, whereas *c*, *d* are reduced and separated to each other.

Length. ca. 5.20 mm (Head 0.65 mm long x 0.77 mm wide; pronotum 0.78 mm x 0.93 mm; elytra 0.90 mm x 1.35 mm).

Female. Tergite VIII is like that of the male sex; Sternite VIII has longer macrosetae and with a row of long and short marginal setae. Spermatheca (Fig. K) is with an elongate bursa and has no umbilicus within; a twisted stalk and long narrow duct are present.

Specimens examined : Holo- (♂) & allotypes. Nikyu-kyo, nr. Kure, Hiroshima Pref., 5 IV, 1989, I. Okamoto leg.

In many crucial characters it is near *P. fusca* K. Sawada, 1989, but differs in broader glossa, anteriorly removed *b* seta of labial palpus, longer antennae, and in much longer metatarsi.

Besides, the integument in the fore-parts is much more roughly sculptured in the present species.

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